

SEQUENCE LISTING

<110> Qian, Su
 Van der Ploeg, Leonardus, H.T.
 Chen, Howard
 Weingarth, Drew T.
 Trumbauer, Myrna
 Metzger, Joseph M.

<120> Agouti-related protein deficient cells,
 non-human transgenic animals and methods of selecting
 compounds which regulate energy metabolism

<130> 21033YP

<150> PCT/US03/20245

<151> 2003-06-27

<150> 60/393,391

<151> 2002-07-03

<160> 14

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 923

<212> DNA

<213> Mus musculus

<400> 1

```

agactatata ggaattggga ctttctggga gcatctctct cagcgctggt aggggtaccct 60
aaggatgagg agagactaaa tgggggtttt cctgctgagc caggccatgc tgactgcaat 120
gttgctgagt tgtgttctgc tgttggcact gcctccaca ctgggggtcc agatgggct 180
ggctccactg aagggcata gaaggcctga ccaggctctg tcccagagt tcccagggtga 240
gtatggtcag gttggggata tgtggggcaa cgaccattgc tggccacaga cctgcccgc 300
caggcttaga cctccttccc caatcccaat cccaacctag ggaggtgggt acttggtgca 360
tggtgggtgt ggccctcaca tcttcttgcc ccagggtctaa gtctgaatgg cctcaagaag 420
acaactgcag accgagcaga agaagttctg ctgcagaagg cagaagcttt gccggaggta 480
actcattagg gaaagggata aagtagaagg tagggcgcat cagataccat catctctccc 540
cacttccgga ttacccaacc tgggcagaac tgcagccct cctgacctc agtccactgc 600
caccctactg gggtcgggggt ttgagagttt cctgaacctt attcccctac gaatgcaggt 660
gctagatcca cagaaccgcg agtctcgctt tccgcgtcgc tgtgtaaggc tgcacgagtc 720
ctgcttggga cagcaggtac cttgctgcga cccgtgcgct acgtgctact gccgttctt 780
caatgccttt tgctactgcc gcaagctggg taccgccacg aacctctgta gtcgcaccta 840
gccaatggat gttgtttggg aaaggcaggg gatgagaata aaggatcggg acggtttaac 900
cttaaagctg tggttatttc ttt                                     923

```

<210> 2

<211> 131

<212> PRT

<213> Mus musculus

<400> 2

```

Met Leu Thr Ala Met Leu Leu Ser Cys Val Leu Leu Leu Ala Leu Pro
 1           5           10           15
Pro Thr Leu Gly Val Gln Met Gly Val Ala Pro Leu Lys Gly Ile Arg
      20           25           30
Arg Pro Asp Gln Ala Leu Phe Pro Glu Phe Pro Gly Leu Ser Leu Asn
      35           40           45
Gly Leu Lys Lys Thr Thr Ala Asp Arg Ala Glu Glu Val Leu Leu Gln
      50           55           60
Lys Ala Glu Ala Leu Ala Glu Val Leu Asp Pro Gln Asn Arg Glu Ser
65           70           75           80
Arg Ser Pro Arg Arg Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln
      85           90           95
Gln Val Pro Cys Cys Asp Pro Cys Ala Thr Cys Tyr Cys Arg Phe Phe
      100          105          110
Asn Ala Phe Cys Tyr Cys Arg Lys Leu Gly Thr Ala Thr Asn Leu Cys
      115          120          125
Ser Arg Thr
      130

```

<210> 3
 <211> 486
 <212> DNA
 <213> Homo sapien

```

<400> 3
gccatgctga ccgcagcggg gctgagctgt gccctgctgc tggcactgcc tgccacgcga 60
ggagcccaga tgggcttggc ccccatggag ggcatacagaa ggcctgacca ggccctgctc 120
ccagagctcc caggcctggg cctgcggggc ccactgaaga agacaactgc agaacaggca 180
gaagaggatc tggtgcagga ggctcaggcc ttggcagagg tactagacct gcaggaccgc 240
gagccccgct cctcacgtcg ctgcgtaagg ctgcatgagt cctgcctggg acagcagggtg 300
ccttgctgtg acccatgtgc cacgtgctac tgccgcttct tcaatgcctt ctgctactgc 360
cgcaagctgg gtactgccat gaatccctgc agccgcacct agctggccaa cgtcagggtc 420
ggggctaggg taggggcaag gaaactcgaa taaaggatgg gaccaacaaa aaaaaaaaaa 486
aaaaaa

```

<210> 4
 <211> 132
 <212> PRT
 <213> Homo sapien

```

<400> 4
Met Leu Thr Ala Ala Val Leu Ser Cys Ala Leu Leu Leu Ala Leu Pro
 1           5           10           15
Ala Thr Arg Gly Ala Gln Met Gly Leu Ala Pro Met Glu Gly Ile Arg
      20           25           30
Arg Pro Asp Gln Ala Leu Leu Pro Glu Leu Pro Gly Leu Gly Leu Arg
      35           40           45
Ala Pro Leu Lys Lys Thr Thr Ala Glu Gln Ala Glu Glu Asp Leu Leu
      50           55           60
Gln Glu Ala Gln Ala Leu Ala Glu Val Leu Asp Leu Gln Asp Arg Glu
65           70           75           80
Pro Arg Ser Ser Arg Arg Cys Val Arg Leu His Glu Ser Cys Leu Gly
      85           90           95
Gln Gln Val Pro Cys Cys Asp Pro Cys Ala Thr Cys Tyr Cys Arg Phe
      100          105          110

```

Phe Asn Ala Phe Cys Tyr Cys Arg Lys Leu Gly Thr Ala Met Asn Pro
 115 120 125
 Cys Ser Arg Thr
 130

<210> 5
 <211> 483
 <212> DNA
 <213> Mus musculus

<400> 5
 atgctaggta acaagcgaat ggggctgtgt ggactgaccc tcgctctatc tctgctcgtg 60
 tgtttgggca ttctggctga ggggtacccc tccaagccgg acaatccggg cgaggacgca 120
 ccagcagagg acatggccag atactactcc gctctgacgac actacatcaa tctcatcacc 180
 agacagagat atggcaagag atccagccct gagacactga tttcagacct cttaatgaag 240
 gaaagcacag aaaacgcccc cagaacaagg cttgaagacc cttccatgtg gtgatgggaa 300
 atgaaacttg ttctcccgac ttttccaagt ttccaccctc atctcatctc atccatcccc 360
 tgaaaccagt ctgcctgtcc caccaatgca tgccaccact aggctggact ccgccccatt 420
 tcccttggtg ttgttgtata tatgtgtgtt taaataaagt accatgcatt caaaaaaaaaa 480
 aaa 483

<210> 6
 <211> 97
 <212> PRT
 <213> Mus musculus

<400> 6
 Met Leu Gly Asn Lys Arg Met Gly Leu Cys Gly Leu Thr Leu Ala Leu
 1 5 10 15
 Ser Leu Leu Val Cys Leu Gly Ile Leu Ala Glu Gly Tyr Pro Ser Lys
 20 25 30
 Pro Asp Asn Pro Gly Glu Asp Ala Pro Ala Glu Asp Met Ala Arg Tyr
 35 40 45
 Tyr Ser Ala Leu Arg His Tyr Ile Asn Leu Ile Thr Arg Gln Arg Tyr
 50 55 60
 Gly Lys Arg Ser Ser Pro Glu Thr Leu Ile Ser Asp Leu Leu Met Lys
 65 70 75 80
 Glu Ser Thr Glu Asn Ala Pro Arg Thr Arg Leu Glu Asp Pro Ser Met
 85 90 95
 Trp

<210> 7
 <211> 404
 <212> DNA
 <213> Homo sapien

<400> 7
 atgctaggta acaagcgact ggggctgtcc ggactgaccc tcgccctgtc cctgctcgtg 60
 tgccctgggtg cgctggccga ggcgtacccc tccaagccgg acaaccggg cgaggacgca 120
 ccagcggagg acatggccag atactactcg gcgctgacgac actacatcaa cctcatcacc 180
 aggcagagat atggaaaacg atccagccca gagacactga tttcagacct cttgatgaga 240
 gaaagcacag aaaatgttcc cagaactcgg cttgaagacc ctgcaatgtg gtgatgggaa 300
 atgagacttg ctctctggcc ttttcctatt ttccagcccat atttcatcgt gtaaaacgag 360
 aatccaccca tcctaccaat gcattgcagcc actgtgtctga attc 404

<210> 8
 <211> 97
 <212> PRT
 <213> Homo sapien

<400> 8
 Met Leu Gly Asn Lys Arg Leu Gly Leu Ser Gly Leu Thr Leu Ala Leu
 1 5 10 15
 Ser Leu Leu Val Cys Leu Gly Ala Leu Ala Glu Ala Tyr Pro Ser Lys
 20 25 30
 Pro Asp Asn Pro Gly Glu Asp Ala Pro Ala Glu Asp Met Ala Arg Tyr
 35 40 45
 Tyr Ser Ala Leu Arg His Tyr Ile Asn Leu Ile Thr Arg Gln Arg Tyr
 50 55 60
 Gly Lys Arg Ser Ser Pro Glu Thr Leu Ile Ser Asp Leu Leu Met Arg
 65 70 75 80
 Glu Ser Thr Glu Asn Val Pro Arg Thr Arg Leu Glu Asp Pro Ala Met
 85 90 95
 Trp

<210> 9
 <211> 402
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Probe

<400> 9
 catgctgacc gcaatgttgc tgagttgtgt tctgctgttg gcactgcctc ccacactggg 60
 ggtccagatg ggcgtggctc cactgaagg catcagaagg cctgaccagg ctctgttccc 120
 agagttccca ggtctaagtc tgaatggcct caagaagaca actgcagacc gagcagaaga 180
 agttctgctg cagaaggcag aagctttggc ggaggtgcta gatccacaga accgcgagtc 240
 tcgttctccg cgctgctgtg taaggctgca cgagtcctgc ttgggacagc aggtaccttg 300
 ctgcgaccgc tgcgctacgt gctactgccg cttcttcaat gccttttgct actgccgcaa 360
 gctgggtacg gccacgaacc tctgcagccg cacctagcca at 402

<210> 10
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Oligonucleotides

<400> 10
 tgcagcagaa cttcttctgc tcggtctgca gttgtcttct tgagg 45

<210> 11
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotides

<400> 11

agcttgccggc agtagcaaaa ggcattgaag aagcggcagt agcac

45

<210> 12

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 12

aaatcagaag gccacacccc ggt

23

<210> 13

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 13

aaatcgaccg cgtggtggtg ctaat

25

<210> 14

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 14

taaagcgcat gctccagact gcctt

25